

L4 ANSWER 6 OF 10 CA COPYRIGHT 2002 ACS

AN 126:147550 CA

TI Manufacture of construction **blocks** from granular material and a binder

IN Alexandre, Jacques

PA Sollac S.A., Fr.

SO Fr. Demande, 9 pp.

CODEN: FRXXBL

DT Patent

LA French

IC ICM E04C001-00

ICS C04B028-08; C04B018-14

CC 58-2 (Cement, Concrete, and Related Building Materials)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2735804	A1	19961227	FR 1995-7548	19950623
FR 2735804	B1	19970718		

AB In this process, in which the green blocs are allowed to harden, the binder consists of milled steelmaking **slags**, and the blocs are hardened by heat-treatment in a atm. enriched in CO<sub>2</sub>. The blocs contain >18% granules.

ST converter steelmaking **slag** building bloc; **carbon dioxide** heat treating **slag**

IT Concrete

Construction materials

(**blocks**; compns. contg. binder and granular converter **slags** heat-treated in **carbon dioxide**-contg. atm. for manuf. of)

IT Controlled atmospheres

(**carbon dioxide**-contg.; compns. for concrete bloc manuf. contg. binder and granular converter **slags** heat-treated in)

IT Binders

(compns. for concrete bloc manuf. contg. granular converter **slags** heat-treated in **carbon dioxide**-contg. atm. and)

IT **Slags**

(converter, granular, heat-treated **carbon dioxide** -contg. atm.; concrete **blocks** from compns. contg. manuf. of binder and)

IT Steelmaking **slags**

(granular, heat-t

L3 ANSWER 38 OF 54 CA COPYRIGHT 2002 ACS  
AN 93:119314 CA  
TI Building material from converter **slag**  
IN Ebihara, Koji; Osumi, Koji  
PA Sumitomo Metal Industries, Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 3 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese  
IC C04B023-00  
CC 58-5 (Cement and Concrete Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 55042216	A2	19800325	JP 1978-112663	19780912
	JP 58009778	B4	19830222		

AB High-strength building materials are made from converter **slags** (.ltoreq.10 mm) by mixing with K<sub>2</sub>CO<sub>3</sub> or Na<sub>2</sub>CO<sub>3</sub> 1-3 and water 5-10%, molding at 50-150 kg/cm<sup>2</sup> (molding pressure), and treating with flue gases for **carbonation**, and curing. Thus, crushed converter **slag** contg. CaO 40.6, SiO<sub>2</sub> 9.1, MgO 6.7, Al<sub>2</sub>O<sub>3</sub> 1.6, MnO 6.5, and FeO 19.7% was mixed with K<sub>2</sub>CO<sub>3</sub> 1 and water 10%, compacted at 100 kg/cm<sup>2</sup>, and treated with flue gases (CO<sub>2</sub> 22, N<sub>2</sub> 70%) from a lime calcinator at 300-400.degree. for 2 days to obtain **blocks** having compressive strength 305 kg/cm<sup>2</sup>.

ST building **block** converter **slag**

IT Flue gases  
(converter **slag** treatment with, for **carbonation** in building **block** manuf.)

IT Building materials  
(**blocks**, from converter **slags**, by crushing and **carbonation** with flue gases)

IT **Slags**

L4 ANSWER 7 OF 10 CA COPYRIGHT 2002 ACS  
 AN 122:320897 CA  
 TI Paving **blocks** and their manufacture  
 IN Numata, Tetsushi; Myake, Tatsuro; Hoshi, Hideaki  
 PA Nippon Kokan K. K., Japan  
 SO Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C04B040-02  
 ICS B32B013-00; C04B028-02; E01C005-06  
 CC 58-4 (Cement, Concrete, and Related Building Materials)  
 FAN. CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07048186	A2	19950221	JP 1993-130900	19930601
	JP 2988196	B2	19991206		
PRAI	JP 1993-129695		19930531		

AB The **blocks** have a 1st layer of an aq. mixt. contg. coarse aggregates and a binder comprising a Ca based cementing agent, slaked lime, and/or water quenched blast furnace **slag**; a 2nd layer of an aq. mixt. contg. fine aggregates, a pigment, and a binder comprising a Ca based cementing agent, slaked lime, and/or water quenched blast furnace **slag**; and a hard carbonate surface layer formed by curing in CO<sub>2</sub> within 72 h after molding. The **blocks** are prepd. by casting mixts. for the 1st and 2nd layers successively into a mold, unmolding, and hardening in CO<sub>2</sub>.

ST paving **block** carbonated surface  
 IT Cement  
 Pavements and Roads

L4 ANSWER 9 OF 10 CA COPYRIGHT 2002 ACS  
 AN 101:41698 CA  
 TI **Blocks** of highly-basic manganese **slags** by  
 carbonization  
 IN Gasik, M. I.; Parimonchik, I. B.; Gasik, M. M.; Matyushenko, V. N.;  
 Nuriev, E. B.  
 PA Dnepropetrovsk Metallurgical Institute, USSR  
 SO U.S.S.R.  
 From: Otkrytiya, Izobret., Prom. Obrazttsy, Tovarnye Znaki 1984, (13), 75.  
 CODEN: URXXAF  
 DT Patent  
 LA Russian  
 IC C22B001-242  
 CC 54-2 (Extractive Metallurgy)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	SU 1084321	A1	19840407	SU 1983-3538842	19830111
AB	Highly basic Mn- <b>slag blocks</b> are prepd. by cooling and moistening the <b>slag</b> , and then carbonizing it with a CO2-contg. gas. The technol. is simplified and the efficiency increased by blowing steam through the <b>slag</b> melt at 1400-1450.degree., cooling the melt to 850-900.degree., and then carrying out the cooling and moistening simultaneously with carbonization in 2 stages. Blowing with a mixt. of CO2-contg. gas and steam is initially in a 1:(3.5-4) ratio, and then at 625-675.degree. in a 4.5:1 ratio until the hardening of the <b>blocks</b>				
ST	manganese <b>slag</b> blowing <b>carbon dioxide</b>				
IT	<b>Slags</b> (mangagese high-basicity, controlled cooling of, <b>carbon</b> <b>dioxide</b> and steam blowing in)				
IT	Steam (manganese <b>slag</b> blowing with)				
IT	124-38-9, uses and miscellaneous RL: USES (Uses)				
IT	(manganese <b>slag</b> blowing with) 7439-96-5, uses and miscellaneous RL: USES (Uses)				
	( <b>slags</b> contg., blowing treatment of, <b>carbon</b> <b>dioxide</b> and steam in)				

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L3 ANSWER 32 OF 54 CA COPYRIGHT 2002 ACS  
AN 106:161654 CA  
TI Use of dolomitic limestone for the manufacture of lime-sand bricks and other autoclave-cured silicate building materials, II. Study of the hydration curing of magnesium oxide in the presence of **carbonate** ions  
AU Kaminskas, A.  
CS All-Union Res. Inst. Therm. Insul., Vilnius, SU-232657, USSR  
SO TIZ (1987), 111(1), 36-41  
CODEN: TTZED8; ISSN: 0170-0146  
DT Journal  
LA German  
CC 58-6 (Cement, Concrete, and Related Building Materials)  
AB In the prepn. of lime-sand bricks and **blocks** from pressed mixts. prep'd. from partially hydrated dolomitic limestone (SiO<sub>2</sub> 5.70, Al<sub>2</sub>O<sub>3</sub> 1.80, Fe<sub>2</sub>O<sub>3</sub> 1.66, CaO 50.05, MgO 35.10, P<sub>2</sub>O 0.68, ignition loss 2.65, and free CaO 42.10%) in the presence of CO<sub>3</sub><sup>2-</sup> in the curing system, the optimal conditions for MgO hydration curing were shifted toward higher temps. After short-term selective carbonation of CaO followed by one-step autoclave curing, the molded products attained high strength. Molded products contg. granulated **slags** (SiO<sub>2</sub> 36.25 or 37.90, Al<sub>2</sub>O<sub>3</sub> 7.57 or 10.87, Fe<sub>2</sub>O<sub>3</sub> 0.59 or 0.33, CaO 44.42 or 40.80, and MgO 5.77 or 7.57%) attained high strength after steam curing at only 95-100.degree..  
ST magnesium oxide hydration lime sand brick; **carbonation** lime sand brick; **slag** strength development brick  
IT **Slags**  
(granulated, in lime-sand brick, strength development in relation to)  
IT Bricks  
(lime-sand, prepn. of, magnesium oxide hydration in, **carbonate** effect on)  
IT Limestone, uses and miscellaneous  
RL: USES (Uses)  
(dolomitic, lime-sand brick from,



L4 ANSWER 10 OF 10 CA COPYRIGHT 2002 ACS

AN 1:6662 CA

OREF 1:1611f-h

TI Marble and Stone from **Slag**

SO Am. Contractor (1907), 28, 45

DT Journal

LA Unavailable

CC 20 (Cements, Mortars, and Building Materials)

AB A process has lately been perfected in England by which a very good imitation of lithographic stone and marble can be obtained artificially. Blast-furnace **slag** is crushed and ground to a fine powder and mixed with quicklime, seven parts **slag** to one of lime. This is thoroughly amalgamated in a revolving mixer and subsequently "pugged" with an excess of water to a creamy consistency. This is then subjected to very heavy pressure in iron molds, squeezing out nearly all the water, and formed into **blocks** of the consistency of chalk or stiff marl. When dry the **blocks** are placed in iron cylinders from which the air is exhausted. When a complete vacuum is obtained **carbon dioxide** is introduced and allowed to permeate the stone for three days. This treatment completely recarbonates the hydroxide of calcium binding the mass into a hard rock, closely resembling lithographic stone. If for **slag** a basis of white limestone is used a fine grade of marble is produced which takes a high polish and seems to possess all the properties of the natural rock.

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(FILE 'HOME' ENTERED AT 15:07:43 ON 22 MAY 2002)

FILE 'CA' ENTERED AT 15:07:46 ON 22 MAY 2002

L1 436191 S BLOCK?  
L2 1203 S L1 AND SLAG?  
L3 54 S L2 AND (CARBONAT? OR CARBONATION)  
L4 10 S L2 AND CARBON(W) DIOXIDE

FILE 'STNGUIDE' ENTERED AT 15:17:45 ON 22 MAY 2002

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L3 ANSWER 1 OF 54 CA COPYRIGHT 2002 ACS  
AN 136:329380 CA  
TI Development of large steelmaking **slag blocks** using a  
new **carbonation** process  
AU Isoo, T.; Takahashi, T.; Okamoto, N.; Fukuhara, M.  
CS Fukuyama Works, NKK Corporation, Fukuyama, 721-8510, Japan  
SO Advances in Cement Research (2000), 12(3), 97-101  
CODEN: ACEREN; ISSN: 0951-7197  
PB Thomas Telford Ltd.  
DT Journal  
LA English  
CC 58-1 (Cement, Concrete, and Related Building Materials)  
Section cross-reference(s): 55  
AB Porous 1 m3 **slag blocks** were produced by  
**carbonation** of fine steelmaking **slag** over a period of 12  
days. The compressive strength and bulk d. of the **blocks** were  
18.4  $\pm$  3.3 MPa and 2.4 g/cm<sup>3</sup>, resp. To make a large **block**,  
the optimum amt. of water and bulk d. of the compact were 5.3-6.3 wt.% and  
2.30-2.37 g/cm<sup>3</sup>, resp. The **carbonation** reaction occurred  
homogeneously in the **blocks**, and the amt. of CO<sub>2</sub> that reacted  
with the **slag** was  $\approx$  6 wt.% at all depths from the  
**block** surface. When left exposed to various weather conditions  
for 1 yr, the **blocks** showed no cracks or degrdn.  
ST steelmaking **slag carbonation block** prodn  
IT **Slags**  
(steelmaking; development of large steelmaking **slag**  
**blocks** using **carbonation** process)  
IT 124-38-9, Carbon dioxide, processes  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical  
process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
(development of large steelmaking **slag blocks** using  
**carbonation** process)

*Apptw/3*



L3 ANSWER 10 OF 54 CA COPYRIGHT 2002 ACS  
 AN 133:33681 CA  
 TI Creation and enrichment of colonies of marine algae by using artificial  
 stone as cultivation bed  
 IN Takahashi, Tatsuhito; Isoo, Norio; Kato, Makoto; Nakajima, Hirohisa;  
 Tanabe, Haruyoshi  
 PA Nippon Kokan Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 14 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM A01K061-00  
 ICS A01G033-00; C04B032-00  
 CC 58-4 (Cement, Concrete, and Related Building Materials)  
 Section cross-reference(s): 10

FAN. CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000157095	A2	20000613	JP 1998-353865	19981127
AB	Artificial stone <b>blocks</b> bonded with CaCO <sub>3</sub> obtained by <b>carbonation</b> of powdery and/or granular materials contg. uncarbonated Ca are temporarily submerged close to marine algae colonies for implantation of marine algae on the surfaces of the <b>blocks</b> . The implanted <b>blocks</b> are transferred as seed <b>blocks</b> to predetd. places and addnl. <b>blocks</b> are arranged around the seed <b>blocks</b> for creation of new colonies. The uncarbonated Ca-contg. materials may be concrete, cement, mortar, and/or refractory, and the artificial stone <b>blocks</b> may also contain steelmaking <b>slag</b> .				
ST	marine algae cultivation bed artificial				

